

ABSTRACT

The present invention relates, among other things, to a method for forming a workpiece (24₀) of a material having an exponential tensile stress-strain behaviour into a thin-walled, hollow shell (24₃). In this method, the workpiece (24₀) is clamped on its periphery and is actively rotated about its centre line (M). A freely rotatable spinning die (4) having an external side (4a) with the desired shell shape (24₃) is pressed with a suitable pressure force against a workpiece side (24a). At least one path-controlled spinning roller (14, 17) is pressed against the other workpiece side (24b) so that the rotating workpiece (24₀) is formed into shell (24₃) exclusively by the local pressure forces, the relative velocity between the workpiece (24₀) and the at least one spinning roller (14, 17) and the force exerted on the workpiece (24₀) by the at least one spinning roller (14, 17) and the spinning die (4) being matched to one another such that the pressure forces applied to the workpiece (24₀) are below the yield strength of the workpiece (24₀). In addition, the present invention relates to a device for carrying out the method. Moreover, the present invention relates to a method and a device for forming a workpiece of a material which was previously only formable at known hot-forming temperatures, but as a result of the present invention, is now able to be formed into a thin-walled, hollow shell at a temperature below the hot-forming temperature known for the material of the workpiece.

(Fig. 1)